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PTO/SB/05 (03-01)

Approved for use through 10/31/2002. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. 8021-181 (SS-19649-US)

First Inventor Kil-hyen RYU

Title Combined Beamforming-Diversity Wireless.....

Express Mail Label No. EV413369268US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
2. ☐ Applicant claims small entity status.
See 37 CFR 1.27.
3. ☒ Specification [Total Pages 34]
(preferred arrangement set forth below)
 - Descriptive title of the invention
 - Cross Reference to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to sequence listing, a table, or a computer program listing appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
4. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets 4]
5. Oath or Declaration [Total Pages 2]
 - a. ☒ Newly executed (original or copy)
 - b. ☐ Copy from a prior application (37 CFR 1.63 (d))
(for continuation/divisional with Box 18 completed)
 - i. ☐ **DELETION OF INVENTOR(S)**
Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ Application Data Sheet. See 37 CFR 1.76

ADDRESS TO:

Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)
8. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
 - a. ☐ Computer Readable Form (CRF)
 - b. Specification Sequence Listing on:
 - i. ☐ CD-ROM or CD-R (2 copies); or
 - ii. ☐ paper
 - c. ☐ Statements verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. ☒ Assignment Papers (cover sheet & document(s))
10. ☐ 37 CFR 3.73(b) Statement (when there is an assignee) ☒ Power of Attorney
11. ☐ English Translation Document (if applicable)
12. ☒ Information Disclosure Statement (IDS)/PTO-1449 ☒ Copies of IDS Citations
13. ☐ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503) (Should be specifically itemized)
15. ☒ Certified Copy of Priority Document(s) (if foreign priority is claimed)
16. ☐ Nonpublication Request under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent
17. ☒ Other Credit Card Payment Form PTO-2038 for \$856.00 & \$40.00

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: _____/_____

Prior application information:

Examiner _____

Group Art Unit: _____

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

☐ Customer Number or Bar Code Label

(Insert Customer No. or Attach bar code label here)

or ☐ Correspondence address below

Name Frank Chau, Esq.

F. CHAU & ASSOCIATES, LLP

Address 1900 Hempstead Turnpike

City East Meadow

State

New York

Zip Code

11554

Country

USA

Telephone

516-357-0091

Fax

516-357-0092

Name (Print/Type)

Frank V. DeRosa

Registration No. (Attorney/Agent)

43,584

Signature

Date

4/18/13

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.

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FEE TRANSMITTAL for FY 2003

Effective 01/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 896.00)

Complete if Known

| | |
|----------------------|------------------------|
| Application Number | |
| Filing Date | November 18, 2003 |
| First Named Inventor | Kil-hyen RYU |
| Examiner Name | |
| Art Unit | |
| Attorney Docket No. | 8021-181 (SS-19649-US) |

METHOD OF PAYMENT (check all that apply)

☐ Check ☒ Credit card ☐ Money Order ☐ Other ☐ None

☐ Deposit Account:

 Deposit
Account
Number
Deposit
Account
Name

50-0679

F. Chau & Associates, LLP

The Commissioner is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☒ Credit any overpayments

☐ Charge any additional fee(s) during the pendency of this application

☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

| Large Entity | | Small Entity | | Fee Description | Fee Paid |
|--------------|----------|--------------|----------|------------------------|-------------|
| Fee Code | Fee (\$) | Fee Code | Fee (\$) | | |
| 1001 | 750 | 2001 | 375 | Utility filing fee | 770.00 |
| 1002 | 330 | 2002 | 165 | Design filing fee | |
| 1003 | 520 | 2003 | 260 | Plant filing fee | |
| 1004 | 750 | 2004 | 375 | Reissue filing fee | |
| 1005 | 160 | 2005 | 80 | Provisional filing fee | |
| SUBTOTAL (1) | | | | | (\$ 770.00) |

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

| Total Claims | Extra Claims | Fee from below | Fee Paid |
|--------------------|--------------|----------------|----------|
| 20 | -20** = 0 | 18 | 0 |
| 4 | -3** = 1 | 86 | 86 |
| Multiple Dependent | | 290 | 0 |

| Large Entity | | Small Entity | | Fee Description |
|--------------|----------|--------------|----------|--|
| Fee Code | Fee (\$) | Fee Code | Fee (\$) | |
| 1202 | 18 | 2202 | 9 | Claims in excess of 20 |
| 1201 | 84 | 2201 | 42 | Independent claims in excess of 3 |
| 1203 | 280 | 2203 | 140 | Multiple dependent claim, if not paid |
| 1204 | 84 | 2204 | 42 | ** Reissue independent claims over original patent |
| 1205 | 18 | 2205 | 9 | ** Reissue claims in excess of 20 and over original patent |

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Small Entity

| Fee Code | Fee (\$) | Fee Code | Fee (\$) | Fee Description | Fee Paid |
|----------|----------|----------|----------|--|----------|
| 1051 | 130 | 2051 | 65 | Surcharge - late filing fee or oath | |
| 1052 | 50 | 2052 | 25 | Surcharge - late provisional filing fee or cover sheet | |
| 1053 | 130 | 1053 | 130 | Non-English specification | |
| 1812 | 2,520 | 1812 | 2,520 | For filing a request for <i>ex parte</i> reexamination | |
| 1804 | 920* | 1804 | 920* | Requesting publication of SIR prior to Examiner action | |
| 1805 | 1,840* | 1805 | 1,840* | Requesting publication of SIR after Examiner action | |
| 1251 | 110 | 2251 | 55 | Extension for reply within first month | |
| 1252 | 410 | 2252 | 205 | Extension for reply within second month | |
| 1253 | 930 | 2253 | 465 | Extension for reply within third month | |
| 1254 | 1,450 | 2254 | 725 | Extension for reply within fourth month | |
| 1255 | 1,970 | 2255 | 985 | Extension for reply within fifth month | |
| 1401 | 320 | 2401 | 160 | Notice of Appeal | |
| 1402 | 320 | 2402 | 160 | Filing a brief in support of an appeal | |
| 1403 | 280 | 2403 | 140 | Request for oral hearing | |
| 1451 | 1,510 | 1451 | 1,510 | Petition to institute a public use proceeding | |
| 1452 | 110 | 2452 | 55 | Petition to revive - unavoidable | |
| 1453 | 1,300 | 2453 | 650 | Petition to revive - unintentional | |
| 1501 | 1,300 | 2501 | 650 | Utility issue fee (or reissue) | |
| 1502 | 470 | 2502 | 235 | Design issue fee | |
| 1503 | 630 | 2503 | 315 | Plant issue fee | |
| 1460 | 130 | 1460 | 130 | Petitions to the Commissioner | |
| 1807 | 50 | 1807 | 50 | Processing fee under 37 CFR 1.17(q) | |
| 1806 | 180 | 1806 | 180 | Submission of Information Disclosure Stmt | |
| 8021 | 40 | 8021 | 40 | Recording each patent assignment per property (times number of properties) | 40.00 |
| 1809 | 750 | 2809 | 375 | Filing a submission after final rejection (37 CFR 1.129(a)) | |
| 1810 | 750 | 2810 | 375 | For each additional invention to be examined (37 CFR 1.129(b)) | |
| 1801 | 750 | 2801 | 375 | Request for Continued Examination (RCE) | |
| 1802 | 900 | 1802 | 900 | Request for expedited examination of a design application | |

Other fee (specify)

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 40.00)

SUBMITTED BY

(Complete if applicable)

| | | | | | |
|-------------------|---|-----------------------------------|----------|-----------|--------------|
| Name (Print/Type) | Frank V. DeRosa | Registration No. (Attorney/Agent) | 43,584 | Telephone | 516-357-0091 |
| Signature |  | Date | 11/18/03 | | |

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

PATENT APPLICATION

Atty. Docket No. 8021-181 (SS-19649-US)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

MAIL STOP PATENT APPLICATIONS

Commissioner for Patents
PO Box 1450
Alexandria VA 22313-1450

UTILITY APPLICATION FEE TRANSMITTAL

Sir:

Transmitted herewith for filing is the patent application of

Inventor(s): Kil-hyen RYU, Suk-won KIM

For:

COMBINED BEAMFORMING-DIVERSITY WIRELESS FADING
CHANNEL DEMODULATOR USING ADAPTIVE SUB-ARRAY GROUP
ANTENNAS, SIGNAL RECEIVING SYSTEM AND METHOD FOR
MOBILE COMMUNICATIONS

Enclosed are:

- [X] 22 page(s) of specification
- [X] 1 page(s) of Abstract
- [X] 11 page(s) of claims
- [X] 4 sheets of drawings [X] formal [] informal
- [X] 2 page(s) of Declaration and Power of Attorney
- [X] An Assignment of the invention to:
Samsung Electronics Co., Ltd.

CERTIFICATION UNDER 37 C.F.R. § 1.10

I hereby certify that this New Application Transmittal and the documents referred to as enclosed therein are being deposited with the United States Postal Service on this date November 18, 2003 in an envelope as "Express Mail Post Office to Addressee" Mail Label Number EV 413369268 US addressed to: Commissioner for Patents, PO Box 1450, Alexandria VA 22313-1450.

Frank V. DeRosa

(Type or print name of person mailing paper)


(Signature of person mailing paper)

☐ This application claims the benefit under 35 U.S.C. §119(e) of U.S. Provisional Application(s) No(s):

APPLICATION NO(S):

FILING DATE

___/___/___

___/___/___

___/___/___

___/___/___

☒ Certified copy of applications

Country

Appln. No.

Filed

Korea

2003-44851

3 July 2003

from which priority under Title 35 United States Code, § 119 is claimed

☒ is enclosed.

☐ will follow.

☐ The fees to be charged are to be based on the number of claims remaining as a result of the attached Preliminary Amendment.

CALCULATION OF UTILITY APPLICATION FEE

| For | Number Filed | Number Extra | Rate | Basic Fee \$ 770.00 |
|---------------------------------|--|-----------------|------------|------------------------|
| Total Claims* | 20 | -20 = 0 | x \$ 18.00 | \$.00 |
| Independent Claims | 4 | -3 = 1 | x \$ 86.00 | \$ 86.00 |
| Multiple Dependent Claims | <input type="checkbox"/> yes | Add'l. Fee | \$290.00 | \$ |
| | <input checked="" type="checkbox"/> no | Add'l. Fee | None | = \$ |
| TOTAL | | | | \$ 856.00 |

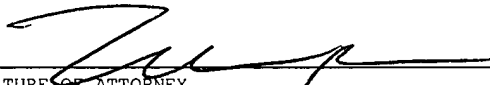
☐ Applicant claims Small Entity Status Under 37 C.F.R. § 1.27. Reduced fees under 37 C.F.R. § 1.9(f) (50% of total) paid herewith \$_____.

*Includes all independent and single dependent claims and all claims referred to in multiple claims. See 37 C.F.R. § 1.75(c).

- [X] Please charge fee of \$40.00 For recording the attached Assignment by Credit Card Payment Form PTO-2028 enclosed herewith.
- [X] Please charge fee of \$856.00 to cover the filing fee by Credit Card Payment Form PTO-2038 enclosed herewith.
- [] Charge fee to Deposit Account No. 50-0679. Order No. 50-0679. TWO (2) COPIES OF THIS SHEET ARE ENCLOSED.
- [X] Please charge any deficiency as well as any other fee(s) which may become due under 37 C.F.R. § 1.16 and 1.17, at any time during the pendency of this application, or credit any overpayment of such fee(s) to Deposit Account No. 50-0679. Also, in the event any extensions of time for responding are required for the pending application(s), please treat this paper as a petition to extend the time as required and charge Deposit Account No. 50-0679 therefor. TWO (2) COPIES OF THIS SHEET ARE ENCLOSED.

Date:

11/18/03


SIGNATURE OF ATTORNEY
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FC/FVD/MRF:mel